

# Siwen Yan

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## Education

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- The University of Texas at Dallas Aug. 2018-Aug. 2023 (expected)  
Ph.D., Computer Science (GPA: 3.93), Advisor: Prof. Sriraam Natarajan
- University of California San Diego Sep. 2015-Jun. 2017  
M.S., Electrical and Computer Engineering (GPA: 3.55)
- Harbin Institute of Technology Aug. 2011-Jul. 2015  
B.E., Measurement, Control Technique and Instruments (GPA: 3.52)

## Research Interests

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Probabilistic Graphical Models, Statistical Relational AI, Graph Neural Networks, AI Applications in Healthcare, Neuro-Symbolic AI, Human in the Loop, Reinforcement Learning, Knowledge-based systems.

## Publications

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- **S. Yan**, S. Natarajan, S. Joshi, R. Khardon, P. Tadepalli, Explainable Models via Compression of Tree Ensembles, **IJCLR 2022** (Journal track), under review.
- D. S. Dhami, **S. Yan**, S. Natarajan, A Statistical Relational Approach to Learning Distance-based GCNs, In **Statistical Relational AI (StarAI) Workshop at IJCLR 2021**.
- D. S. Dhami, **S. Yan**, G. Kunapuli, S. Natarajan, Non-Parametric Learning of Embeddings for Relational Data using Gaifman Locality Theorem, In **ILP 2021**.
- D. S. Dhami\*, **S. Yan\***, G. Kunapuli, D. Page, S. Natarajan, Predicting Drug-Drug Interactions from Heterogeneous Data: An Embedding Approach, In **AIME 2021**. (\*=equal contribution)
- **S. Yan**, D. S. Dhami, S. Natarajan, The Curious Case of Stacking Boosted Relational Dependency Networks, In **I Can't Believe It's Not Better (ICBINB) Workshop at NeurIPS 2020**.
- D. S. Dhami, **S. Yan**, G. Kunapuli, S. Natarajan, Non-Parametric Learning of Gaifman Models, In **Statistical Relational AI (StarAI) Workshop at AAAI 2020**.

## Experience

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- Applied Scientist Intern, Amazon, WA May 2022-Aug. 2022  
Investigate the problem of attribute value extraction using edging techniques of deep language models and big data tools.
- Student Mentor, UT Dallas, TX Fall 2021  
Help mentor the undergraduate team "Deep Learning for Brain Disorders" of ACM Research Program
- Student Mentor, UT Dallas, TX Summer 2021  
Help mentor the Summer Research Internship for High School Students - K-12 Outreach
- Research Assistant, Starling Lab, UT Dallas, TX May 2020-present
- Teaching Assistant, UT Dallas, TX Aug. 2018-May 2020
  - Spring 2020: CS6375 Machine Learning and CS6360 Database Design
  - Fall 2019: CS7301 Advanced Machine Learning and SE4367 Software Testing Verification Validation and Quality Assurance
  - Spring 2019: CS6301 Machine Learning Engineer/Scientists and CS4347 Database Systems
  - Fall 2018: CS6375 Machine Learning (CS6\*/7\* - graduate, CS/SE4\* - undergraduate)
- Data Analyst Intern, Pure Technologies Ltd., Columbia, MD Jun. 2016-Sep. 2016  
Provide regular support of data analysis and prediction. Modified the TRM model (combining several machine learning models and Bayesian network) in R to help new product generate results.

## Technical Skills

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Python, PyTorch, Java, C/C++, Shell, MATLAB, R, Linux/Unix, Git, SQL.

## Selected Projects

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- RL for Influence Maximization: Design three-coupled graph neural networks for network embedding and use deep reinforcement learning to solve the influence maximization learning problem.
- Transfer Learning with VGG16: Investigate the generalization ability of VGG16 to Caltech 256 and Urban Tribes, visualize neurons and evaluate feature extraction effect of convolutional layers.
- Multi-Layer Neural Network Implementation: Implement back-propagation mechanism of neural networks using Python. Improve performance on MNIST database by applying training tricks and manipulating hyperparameters.
- Composing Music with Recurrent Networks: Construct a recurrent neural network using Keras to learn the structure of the ABC notation music, and visualize neuron activation by forward propagation and heatmap plot.
- Helpfulness and Rating prediction with Latent Factor Models: Analyze top features and latent correlation between users and items.

## Academic Service

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- A member of the Program Committee of GCLR Workshop at AAAI 2022.
- Reviewer of AISTATS 2023, NeurIPS 2022.
- Reviewed papers for AISTATS 2022.
- A member of the Program Committee of IJCAI 2022 Demonstrations Track.
- A member of the Technical Program Committee of ACMMM 2022.
- Reviewed papers for ACMMM 2021.